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l12 and l8	1

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IBM Technical Disclosure Bulletins

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L13

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*DB=USPT; PLUR=YES; OP=ADJ*

L13    l12 and l8  
L12    ('5704291')[PN]  
L11    l9 and l8  
L10    l7 and suction  
L9    ('3678852'| '5704291')[PN]  
L8    L7 and vacuum  
L7    l4 and laser same ablat\$ same (ir or infrared) same pulse  
L6    L4 and eras\$ same laser same (ir or infrared or pulse)  
L5    L4 and eras\$ same laser  
L4    l3 or l2 or l1  
L3    ((430/302 )!.CCLS. )  
L2    ((101/478 )!.CCLS. )  
L1    ((101/453 |101/454 |101/455 |101/456 |101/457 |101/458 |101/459  
|101/460 |101/461 |101/462 |101/463.1 |101/464 |101/465 |101/466  
|101/467 )!.CCLS. )

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1    L13  
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2    L9  
18    L8  
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26    L5  
3320    L4  
1598    L3  
57    L2  
2253    L1

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L13: Entry 1 of 1

File: USPT

Jan 6, 1998

DOCUMENT-IDENTIFIER: US 5704291 A

TITLE: Lithographic printing members with deformable cushioning layers

US Patent No. (1):5704291Brief Summary Text (12):

In both of these two-ply embodiments, a single layer serves two separate functions, namely, absorption of IR radiation and interaction with ink or an ink-abhesive fluid. In a second embodiment, these functions are performed by two separate layers. The first, topmost layer is chosen for its affinity for (or repulsion of) ink or an ink-abhesive fluid. Underlying the first layer is a second layer, which absorbs IR radiation. A strong, durable substrate underlies the second layer, and is characterized by an affinity for (or repulsion of) ink or an ink-abhesive fluid opposite to that of the first layer. Exposure of the printing member to a laser pulse ablates the absorbing second layer, weakening the topmost layer as well. As a result of ablation of the second layer, the weakened surface layer is no longer anchored to an underlying layer, and is easily removed. The disrupted topmost layer (and any debris remaining from destruction of the absorptive second layer) is removed in a post-imaging cleaning step. This, once again, creates an image spot having an affinity for ink or an ink-abhesive fluid differing from that of the unexposed first layer.

Detailed Description Text (26):

When the compressible layer is partially or completely ablated, volatile decomposition ordinarily result, and some of these (particularly in the case of polyurethanes) can be harmful. Accordingly, the imaging system should contain gas-removal means for clearing these products from the imaging environment. One approach is to utilize the internal air manifold 155 shown in the '737 patent under vacuum, drawing debris and gases away from the imaging area through ports 160 (see col. 9, lines 59-63 of the '737 patent.

Current US Original Classification (1):101/457Current US Cross Reference Classification (2):101/456Current US Cross Reference Classification (3):430/302

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RWC	Draw Desc	Image
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Terms	Documents
l12 and l8	1

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L8 not 17	1

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**DATE: Monday, June 16, 2003**    [Printable Copy](#)    [Create Case](#)
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*DB=USPT; PLUR=YES; OP=ADJ*

<u>L9</u>	L8 not 17	1	<u>L9</u>
<u>L8</u>	15 and eras\$ near10 (laser or ablat\$)	5	<u>L8</u>
<u>L7</u>	15 and eras\$ near5 (laser or ablat\$)	4	<u>L7</u>
<u>L6</u>	15 and crosslink\$ near5 hydrophilic and eras\$	0	<u>L6</u>
<u>L5</u>	((430/302 )!.CCLS. )	1598	<u>L5</u>
<u>L4</u>	('6408755' '6399270')[PN]	2	<u>L4</u>
<u>L3</u>	L2 and hydrophilic near5 binder and eras\$	6	<u>L3</u>
<u>L2</u>	((101/453  101/454  101/455  101/456  101/457  101/458  101/459  101/460  101/461  101/462  101/463.1  101/464  101/465  101/466  101/467 )!.CCLS. )	2253	<u>L2</u>
<u>L1</u>	5836249.pn. and ablat\$	1	<u>L1</u>

END OF SEARCH HISTORY

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l1 and eras\$ same (laser or ablat\$)	25

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*DB=USPT; PLUR=YES; OP=ADJ*L20 l1 and eras\$ same (laser or ablat\$)25 L20*DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ*L19 ('6408755'|'6487970'|'6484638')[ABPN1,NRPN,PN,WKU]6 L19*DB=USPT; PLUR=YES; OP=ADJ*L18 l1 and reus\$ near5 (substrate or support)12 L18*DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ*L17 (hydrophilic near5 crosslink\$) and (reus\$ near5 (substrate or support))11 L17L16 (hydrophilic near5 crosslink\$) and (eras\$)17 L16L15 (hydrophilic near5 crosslink\$) and (eras\$) same (laser or ablat\$)2 L15L14 (hydrophilic near5 crosslink\$) and (eras\$ or clean\$) near7 (laser or ablat\$)34 L14L13 (hydrophilic near5 crosslink\$) and (eras\$ or clean\$ or remov\$) near7 (laser or ablat\$)97 L13L12 (hydrophilic near5 crosslink\$) and (eras\$ near7 (laser or ablat\$))2 L12L11 L10 and (clean\$ or eras\$ or remov\$) near7 laser near7 ablat\$29 L11L10 agfa\$.as.15772 L10*DB=USPT; PLUR=YES; OP=ADJ*L9 L8 and crosslink\$1 L9L8 l7 and l62 L8L7 ('5925496'|'6210845')[PN]2 L7L6 l1 and (clean\$ or eras\$) near5 laser39 L6L5 L4 and remov\$ near5 laser5 L5L4 L1 and agfa\$.as.108 L4L3 L2 and (clean\$ or eras\$) near5 laser1 L3L2 L1 and agfa\$.as.108 L2L1 ((101/453 |101/454 |101/455 |101/456 |101/457 |101/458 |101/459 |101/460 |101/461 |101/462 |101/463.1 |101/464 |101/465 |101/466 |101/467 )!.CCLS. )2253 L1

END OF SEARCH HISTORY

L Number	Hits	Search Text	DB	Time stamp
1	2253	101/453-467.ccls.	USPAT	2003/06/16 12:29
2	178	101/453-467.ccls. and zirconia and hydrophilic	USPAT	2003/06/16 12:29
3	178	101/453-467.ccls. and (zirconia and hydrophilic)	USPAT	2003/06/16 12:29
4	10	(101/453-467.ccls. and zirconia and hydrophilic) and ghosh.in.	USPAT	2003/06/16 12:29
5	1	5927207.pn.	USPAT; US-PGPUB	2003/06/16 12:30
6	1	5927207.pn. and crosslink\$	USPAT; US-PGPUB	2003/06/16 12:31
7	69	101/478.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/16 12:37
8	1	101/478.ccls. and crosslink\$ near10 hydrophilic	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/16 12:32
9	71	101/453-467.ccls. and crosslink\$ near5 hydrophilic	USPAT; US-PGPUB	2003/06/16 12:37
10	49	(101/453-467.ccls. and crosslink\$ near5 hydrophilic) and remov\$ near5 image	USPAT; US-PGPUB	2003/06/16 12:39
11	3	(101/453-467.ccls. and crosslink\$ near5 hydrophilic) and remov\$ near5 ink near1 accepting	USPAT; US-PGPUB	2003/06/16 12:40
12	93	101/453-467.ccls. and eras\$	USPAT; US-PGPUB	2003/06/16 12:40
13	68	(101/453-467.ccls. and eras\$) not 101/478.ccls.	USPAT; US-PGPUB	2003/06/16 12:40



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L19: Entry 1 of 6

File: USPT

Dec 3, 2002

US-PAT-NO: 6487970

DOCUMENT-IDENTIFIER: US 6487970 B2

TITLE: Method of lithographic printing with a reusable substrate

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 2. Document ID: US 6484638 B2

L19: Entry 2 of 6

File: USPT

Nov 26, 2002

US-PAT-NO: 6484638

DOCUMENT-IDENTIFIER: US 6484638 B2

TITLE: Method of offset printing with a reusable substrate

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 3. Document ID: US 6408755 B1

L19: Entry 3 of 6

File: USPT

Jun 25, 2002

US-PAT-NO: 6408755

DOCUMENT-IDENTIFIER: US 6408755 B1

TITLE: Method for erasing a lithographic printing master

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 4. Document ID: US 6487970 B2 US 20010008105 A1 EP 1118472 A1 JP 2001246725 A

L19: Entry 4 of 6

File: DWPI

Dec 3, 2002

DERWENT-ACC-NO: 2001-482518

DERWENT-WEEK: 200301

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TITLE: Direct-to-plate method of lithographic printing involves removing ink-accepting areas from printing master by supplying cleaning liquid comprising amide and alkanolamine

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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☐ 5. Document ID: US 6484638 B2 US 20010008104 A1 EP 1118471 A1 JP 2001232963 A  
L19: Entry 5 of 6 File: DWPI Nov 26, 2002

DERWENT-ACC-NO: 2001-464297  
DERWENT-WEEK: 200281  
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TITLE: Lithographic printing method with a reusable substrate involves removing the ink-accepting areas from the printing master with an aliphatic or aromatic cleaning liquid having at least six carbon atoms

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC	Draw Desc	Image
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☐ 6. Document ID: EP 1080942 A1 US 6408755 B1 JP 2001105763 A  
L19: Entry 6 of 6 File: DWPI Mar 7, 2001

DERWENT-ACC-NO: 2001-228212  
DERWENT-WEEK: 200246  
COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Removal method for ink accepting area of a printing surface of a lithographic printing master using treatment with an atmospheric plasma

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC	Draw Desc	Clip Img	Image
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Terms	Documents
('6408755' '6487970' '6484638')[ABPN1,NRPN,PN,WKU]	6

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**Search Results - Record(s) 1 through 1 of 1 returned.**☐ 1. Document ID: US 6210845 B1

L9: Entry 1 of 1

File: USPT

Apr 3, 2001

DOCUMENT-IDENTIFIER: US 6210845 B1

TITLE: Plate precursor for lithographic printing plate, method for making lithographic printing plate using the same, and method for producing the plate precursor for lithographic printing plate

US Patent No. (1):  
6210845

Brief Summary Text (5):

As materials for forming the ink-receiving image regions, many organic materials are known. They are basically formed from light-sensitive components (radiant ray-sensitive materials) and binders. As the radiant ray-sensitive materials, many materials are known. Useful negative type compositions include diazo resins, photo-crosslinkable polymers and photo-polymerizable compositions. Useful positive type compositions include aromatic diazo-oxide compounds such as benzoquinonediazides and naphthoquinonediazides. When imagewise exposure is given to these materials, followed by development and optional fixing, image regions of imagewise distribution are formed which can be used in printing.

Brief Summary Text (24):

(5) A method for making a lithographic printing plate, which comprises forming an image by irradiating the plate precursor for a lithographic printing plate described in the above (2) with a laser beam having a wavelength of 800 to 1,200 nm, and then, erasing the image by irradiating it with a laser beam having a wavelength of 10 to 20 .mu.m; and

Detailed Description Text (10):

When the laser exposure is conducted for the purpose of erasing images, there are a method of allowing a laser beam to scan imagewise by digital data and a method of allowing the laser beam to scan the whole surface to conduct exposure.

Current US Cross Reference Classification (1):  
101/456

Current US Cross Reference Classification (2):  
101/467

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWIC	Draw Desc	Image
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**Terms****Documents**

L8 and crosslink\$

1



US 20020148375A1

(19) **United States**(12) **Patent Application Publication** (10) Pub. No.: **US 2002/0148375 A1****Verschuieren et al.**(43) Pub. Date: **Oct. 17, 2002**(54) **CLEANING METHOD FOR RECYCLING A  
PRINTING SUBSTRATE BY LASER  
ABLATION**(30) **Foreign Application Priority Data**

Feb. 14, 2001 (EP) ..... 01000015.6

(75) Inventors: **Eric Verschuieren, Merksplas (BE);  
Marc Van Damme, Bonheiden (BE)****Publication Classification**

Correspondence Address:

**LEYDIG VOIT & MAYER, LTD  
TWO PRUDENTIAL PLAZA, SUITE 4900  
180 NORTH STETSON AVENUE  
CHICAGO, IL 60601-6780 (US)**(51) Int. Cl.<sup>7</sup> ..... **B41F 1/18; B41F 7/00**(52) U.S. Cl. .... **101/450.1**(73) Assignee: **AGFA-GEVAERT, Mortsel (BE)**(57) **ABSTRACT**(21) Appl. No.: **10/068,519**(22) Filed: **Feb. 6, 2002****Related U.S. Application Data**(60) Provisional application No. 60/271,857, filed on Feb.  
27, 2001.

A method is disclosed for removing ink-accepting areas from a printing master by laser ablation, characterized in that the printing master comprises a substrate which comprises a support and a base layer, wherein the base layer contains a crosslinked hydrophilic binder and a metal oxide. The base layer prevents deterioration of the quality of the substrate due to the laser ablation. In a preferred embodiment, the same substrate is used in a number of consecutive printing cycles of on-press coating, on-press exposure, printing and cleaning.



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) **EP 1 232 877 A1**

(12)

**EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
21.08.2002 Bulletin 2002/34

(51) Int Cl.<sup>7</sup>: **B41N 3/00**

(21) Application number: 01000015.6

(22) Date of filing: 14.02.2001

(84) Designated Contracting States:  
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU**  
**MC NL PT SE TR**  
Designated Extension States:  
**AL LT LV MK RO SI**

(72) Inventors:  
• **Verschueren, Eric**  
**Septestraat 27 2640, Mortsel (BE)**  
• **Van Damme, Marc**  
**Septestraat 27 2640, Mortsel (BE)**

(71) Applicant: **AGFA-GEVAERT**  
**2640 Mortsel (BE)**

(54) **Cleaning method for recycling a printing substrate by laser ablation**

(57) A method is disclosed for removing ink-accepting areas from a printing master by laser ablation, characterized in that the printing master comprises a substrate which comprises a support and a base layer, wherein the base layer contains a crosslinked hydrophilic binder and a metal oxide. The base layer pre-

vents deterioration of the quality of the substrate due to the laser ablation. In a preferred embodiment, the same substrate is used in a number of consecutive printing cycles of on-press coating, on-press exposure, printing and cleaning.

**EP 1 232 877 A1**

(19) 日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11) 特許出願公開番号

特開2002-331635

(P2002-331635A)

(43) 公開日 平成14年11月19日 (2002. 11. 19)

(51) Int.Cl. <sup>7</sup>	識別記号	F I	テマコード <sup>*</sup> (参考)
B 4 1 C 1/055	5 0 1	B 4 1 C 1/055	5 0 1 2 H 0 8 4
B 4 1 N 1/14		B 4 1 N 1/14	2 H 0 9 6
3/00		3/00	2 H 1 1 4
C 2 3 C 28/00		C 2 3 C 28/00	M 4 K 0 4 4
C 2 3 F 4/00		C 2 3 F 4/00	A 4 K 0 5 7

審査請求 未請求 請求項の数10 O L (全 10 頁) 最終頁に続く

(21) 出願番号 特願2002-35135(P2002-35135)

(22) 出願日 平成14年2月13日 (2002. 2. 13)

(31) 優先権主張番号 0 1 0 0 0 0 1 5. 6

(32) 優先日 平成13年2月14日 (2001. 2. 14)

(33) 優先権主張国 欧州特許庁 (E P)

(71) 出願人 593194476

アグフアーグヴェルト, ナームローゼ・フ

エンノートシャツプ

ベルギー・ビー2640モルトセル・セプテス

トラート27

(74) 代理人 100060782

弁理士 小田島 平吉

最終頁に続く

(54) 【発明の名称】 レーザー融除により印刷基材をリサイクルするためのクリーニング化方法

(57) 【要約】

供する。

【課題】 印刷マスターの基材の品質に影響を与えることなく印刷マスターの基材を有効にクリーニングし、それにより基材をゴースト像が出現することなく次の印刷サイクルにおいて再使用することができるようにした方法を提供すること。

【解決手段】 レーザー融除により印刷マスターからインキ受容区域を除去する方法であって、印刷マスターは支持体とベース層を具備する基材を含んでなり、該ベース層は架橋された親水性結合剤及び金属酸化物を含有することを特徴とする方法を提供する。また、(a) 支持体と架橋された親水性結合剤及び金属酸化物を含有するベース層とを具備する基材を用意し、(b) ベース層上に1つ又はそれ以上の層を適用し、それにより像形成材料を得、(c) 像形成材料を熱又は光に像通りに露出しそして場合により像形成材料を処理することによりインキ受容区域を有する印刷マスターを製造し、(d) 印刷し、(e) レーザー融除により印刷マスターからインキ受容区域を除去し、(f) 段階(a)～(d)を繰り返すことにより再使用可能な基材で平版印刷する方法も提